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VICTORIA INSTITUTE.

The Attitude of Science Towards Miracles.

BY

Professor H. LANGHORNE ORCHARD,
M.A., B.Sc.

[Gunning Prize Essay, 1909.]



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501ST ORDINARY GENERAL MEETING.

HELD IN THE HOUSE OF THE ROYAL SOCIETY OF ARTS
ON MONDAY, JANUARY 24TH, 1910, AT 4.30 P.M.

PROFESSOR E. HULL, LL.D., F.R.S. (VICE-PRESIDENT),
IN THE CHAIR.

The Minutes of the previous Meeting were read and confirmed, and the following announcements made on behalf of the Council:—

The Rev. Canon R. B. Girdlestone, M.A., late Chairman of Council, had been appointed a Vice-President in the place of the late W. H. Hudleston, Esq., F.R.S.

The Rev. Griffith Thomas, D.D., Principal of Wycliffe Hall, Oxford, had been appointed to a seat on the Council in the place of Colonel T. H. Hendley, C.I.E., resigned.

Dr. W. A. Shann, of Woking, had been elected an Associate of the Victoria Institute.

The CHAIRMAN then introduced Professor H. Langhorne Orchard, the author of the subsequent paper and winner of the Gunning Prize 1909. He was certain that all those present would derive the greatest pleasure and assistance from the paper, which he might mention had been placed first in their independent reports by all three of the arbiters appointed to consider the essays submitted for the Gunning Prize, so that at their subsequent meetings the task of recommending the award had not proved a difficult one, though none of them had agreed as to the order of the other excellent essays submitted.

Professor H. LANGHORNE ORCHARD, who was received with great applause, then proceeded to read the following paper:—

THE ATTITUDE OF SCIENCE TOWARDS MIRACLES.

By Professor H. LANGHORNE ORCHARD, M.A., B.Sc.
(Being the Gunning Prize Essay, 1909.)

- I. *Preliminary*.—Definitions ; Relations between Science and Miracles ; Nature of Scientific Evidence.
- II. *Miracles in General*.—Are they possible ? Are they probable ? Have miracles actually occurred ?
- III. *The Bible Miracles*.
- Appendix* on miraculous occurrences and "Miracles," other than those recorded in Holy Writ.
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I. *Preliminary*.—The aim of the following Essay is to arrive at a conclusion, as definite as possible, with regard to the attitude of Science towards Miracles. It is premised that the attitude of Science may, or may not, be coincident with that of Scientists.

We begin by defining our terms. What is Science ? What is a Miracle ? Science, says Whitney,* is "knowledge gained by systematic observation, experiment, and reasoning ; knowledge co-ordinated, arranged, and systematized." In the *Encyclopædic Dictionary* we read that Science is "co-ordinated, arranged, and systematized" knowledge, and, again, "Science is a systematic species of knowledge which consists of rule and order"; the verb "know" meaning "having experience of," "perceive with certainty." "Science," says *Chambers' Encyclopædia*, "in its widest significance, is the correlation of all knowledge. To know a truth in its relation to other truths is to know it scientifically." Bouillet† enounces that "on appelle Science soit une connaissance certaine (par opposition à l'opinion, qui n'est que probable), soit un ensemble de connaissances contrôllées et systematisées par l'application d'une méthode." By Huxley‡ Science is regarded as "the knowledge of fact."

* *The Century Dictionary.*

† *Essay on Universities.*

‡ *Dictionnaire Universel.*

These definitions seem to justify the following:—*Science is the investigation and study of things and phenomena in nature, with a view to their explanation and correlation in the great order of the universe.* In doing this, she seeks to arrange and classify them, for the two-fold purpose of retaining knowledge gained and of employing it as a progressive means to further knowledge.

What is a Miracle? Thomas Aquinas* answers:—"Things that are done occasionally by Divine power outside of the usual established order of events are commonly called Miracles. We wonder when we see an effect and do not know the cause. The absolutely wonderful is that which has a cause absolutely hidden. Now the cause absolutely hidden to every man is God." Hume says; "Nothing is esteemed a miracle if it ever happen in the common course of nature"; and, in his affirmation that miracles are "violations" of the laws of nature, has the intellectual sympathy of Spinoza.

A better definition is that given by Locke†—"A miracle I take to be a sensible operation, which, being above the comprehension of the spectator, and in his opinion contrary to the established course of nature, is taken by men to be Divine."

According to the *Encyclopædic Dictionary*, a miracle is etymologically "anything which excites wonder, surprise, or astonishment," and it is "a supernatural event or act."

Butler‡ considers that "A Miracle in its very notion, is relative to a course of nature, and implies something different from it, considered as being so." Isaac Taylor calls a miracle "a fragmentary instance of the eternal order of an upper world." Smythe Palmer would define a miracle "as a new effect introduced by a new cause, and that cause the will of God." Other interesting definitions are the following:—"The best idea which we can form of a miracle is that of an event or phenomenon which is fitted to suggest to us the action of a personal spiritual power" (Westcott). Miracles may be defined, "provisionally," as "Physical phenomena which are unaccountable by the known laws and processes of nature" (Girdlestone).§ A miracle is "An exception to the observed order of nature brought about by God in order to reveal His will or purpose"

* *Summa contra Gentiles.*

† *Discourse of Miracles.*

‡ *Analogy*, Part ii.

§ "The Scriptural Idea of Miracles." *Transactions of the Victoria Institute*, vol. xxxix.

(Lias).* "By a miracle (using the word in its strictest sense), we mean a phenomenon which, either in itself or from the circumstances under which it is presented, suggests the immediate working of a personal power producing results not explicable by what we observe in the ordinary course of nature" (Westcott).†

On careful consideration of what is suggested, or implied, by the term "miracle," it is possible that none of the preceding definitions may be held to be adequate or satisfactory. In seeking one that is so, we note that it includes (1) something marvellous, (2) something exceptional, (3) something taking place in nature, (4) something not explicable by natural (or, human) causes, (5) something directly referable to supernatural action.

(1) That the thing is marvellous is affirmed by the name "miracle" (*miraculum*). (2) It must also be exceptional. The phenomena of the seasons and of day and night, are indeed very wonderful, yet they are not miracles. It has been pointed out that a sudden stoppage of the earth's rotation on her axis would be called a miracle, but we do not apply the term to the rotation, though the rotation is quite as wonderful. (3) A miracle is further thought of as taking place in nature. (4) It is not explicable by natural (or, human) causes. Though it fulfils the previous conditions, yet, if explicable by natural (or, human) causes, it is not a miracle. An eclipse, or the appearance of a new comet is not accounted a miracle; the telephone, the latest *Dreadnought*, an aeroplane, wireless telegraphy, or anything that man can do, or that any part of "nature" can do, however marvellous, we do not consider classifiable as "miracle." (5) It follows that, since every event must be referable to some cause, and the cause in this case is not a natural (or, human) one, it is supernatural.

Hence the following definition, put forward not without diffidence:—*A miracle is an exceptional marvel in nature, not explicable by natural causes, and therefore directly attributable to a supernatural‡ cause.*

* *Are Miracles Credible?*

† *The Gospel of the Resurrection*, 4th Edition, p. 35.

‡ Better thus—*A Miracle is an exceptional marvel in nature which, not being explicable by any human or any natural cause, is attributable to some supernatural cause.* (See the Author's further reply.)

A miracle is a connecting link between the natural and the supernatural. Speaking of Bible miracles, Trench says that a miracle "is a kind of finger-post of God."

Relations between science and miracles: Are there in fact any relations? According to the late Archbishop Temple* science can deal only with such materials as are "reducible to invariable laws." If any observation made by the senses is not capable of being brought under the laws which are found to govern all other observations, it is not yet brought under the dominion of science." The investigation of any newly observed fact "proceeds on the assumption that nature will be found uniform, and on no other assumption can science proceed at all." He points out that "this assumption of something permanent in things around us comes from the consciousness of something permanent within us. We know our own permanence, whatever else we know or do not know about ourselves, we are sure of our own personal identity through successive periods of life. And as our explanation of things outside begins by classing them with things inside we still continue to ascribe permanence to whatever underlies phenomena even when we have long ceased to ascribe individual wills to any except beings like ourselves. And without this assumption of permanence our whole science would come to the ground." He then goes on to say that experience shows the uniformity of the separate laws of nature, and that "the evidence for the uniformity of nature is the accumulated evidence for all the separate uniformities." With regard to the occurrence of miracle, his conclusion is—"science has shown that the vast majority of events are due to derivative action regulated by laws. Here is an event which cannot be so explained any more than the action of our own free will can be so explained." "Science may fairly claim to have shown that miracles, if they happen at all, are exceedingly rare. To demonstrate that they never happen at all is impossible, from the very nature of the evidence on which science rests. But for the same reason science can never in its character of science admit that a miracle has happened. Science can only admit that, so far as the evidence goes, an event has happened which lies outside its province."† From this it might be inferred that the present inquiry need proceed no further,—that science and miracle are like two travellers, ignorant of and incapable of learning each other's language, who pass each other upon different sides of a

* "Relations between Religion and Science" (Bampton Lectures for 1884).

† *Ibid.*

great common highway. They bow, salute, and may smile,—and that is all! But, is science in such bondage to uniformity as the Archbishop seems to suppose? Is she the impotent vassal of the natural formulæ which she justly glories in having discovered? Was there no science during the patient investigations preceding these discoveries, when as yet the rounds of the ladder were unshaped? Was science unborn when walks and talks with nature were leading on to the acquisition of her secrets? Though not mature, science was certainly not then unborn; she was beginning to know nature, and thus to carry out her great mission of subduing the earth; she was laying the foundations without which the future edifice had been impossible.

To Dr. Temple "Science" appears to have stood for "Natural Science" only, and to a narrow concept of science he added a narrow concept of scientific procedure. Yet even were science so "cribbed, cabined, and confined," she still might be permitted to investigate into extraordinary phenomena such as earthquakes, eclipses, and miracles; for there could be no certainty *a priori* that these events might not be included in a uniformity greater and vaster than is that presented to us by "the laws of nature." Science is constantly telling us that lesser uniformities are included in higher,—*e.g.*, the law of weight, the law of tides, the law of the earth's centripetal force, are included in the wider law of gravitation. Dr. Temple himself endorses this thought when, alluding to "the uniformity of nature," he remarks that "this regularity is seen to be more and more widely pervading all phenomena of every class, until the mind is forced to conceive the possibility that it may be absolutely universal*"

If so, it may include miracles, even upon his own definition that a miracle is "an event which we cannot assign to that derivative action to which we have been led to assign the great body of events; we cannot explain it except by referring it to direct and spontaneous action, to a will like our own will."

Since Miracles are phenomena—exceptional phenomena—in nature, Science properly concerns herself with them. For (1) Science takes note of individual facts, otherwise she could not classify; (2) Science is busy with the ordinary and common, and therefore must also recognize the extraordinary and uncommon, as differing; (3) Science seeks material for classifi-

* "Relations between Religion and Science" (Bampton Lectures for 1884).

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cation, and miracles are classifiable*; (4) Science aims at explanation, and miracles may explain what nothing else can explain; science sets herself to take account not of some facts only, but of all; she shirks no part of this task, be the subject radium, hypnotism, miracles, or aught else. She occupies herself not with the usual only, but also with the unusual.

The aversion from miracles which is cherished by some scientists does not rest upon a scientific basis. It is accounted for by two considerations—the one negative in character, the other positive—(1) Unwillingness to admit that something can take place in nature which is not subject to the laws of nature, and is refractory from scientific formulæ; (2) Desire to test every article of faith by experimental methods.

The first objection is a natural prejudice, but, when opposed to truth, is unworthy of a scientific mind; the second, when applied to miracles, is absurd, since excluded by the nature of the case. That belief in the fact of miracles is thoroughly compatible with the true scientific temper may be now stated as a truism. It is illustrated in such leaders as Newton, Faraday, Murchison, Sedgwick, Dawson, Carruthers, Turner, Stokes, Kelvin. The mission of Science is investigation, her perpetual watchword:—Examine and Report.

How is this to be done? is a question which leads us to look at the nature of scientific evidence. Briefly, scientific evidence may be described as—(1) Evidence of observation; (2) Evidence of testimony; (3) Evidence of inference. Examples of these three kinds of evidence are continually coming before us. Practical instances of mechanical principles, of chemical reactions and combinations, of biological processes, and of the behaviour of strange bodies such as radium, are believed by many of us from the evidence of our personal observation, by many more from the evidence of testimony; we may not have seen the phenomenon, but some one else has, and we believe that he has, and we substitute his observation for our own, regarding it as equally valid. A great many things are

* Aquinas (*Summa contra Gentiles*) arranges thus:—"Miracles of the highest rank are those in which something is done by God that nature can never do. Miracles of the second rank are those in which God does something that nature can do, but not in that sequence and connection. A miracle of the third rank is something done by God which is usually done by the operation of nature, but is done in this case without the working of natural principles." See also a classification (under seven heads) of miraculous phenomena connected with the Mission of Christ, by Canon Girdlestone ("The Scriptural Idea of Miracles").

believed upon grounds of inference. Solutions of mathematical and physical problems, and logical deductions—more or less logical—are of this kind. No human being (so far as I am aware) has ever seen the orbit of our earth, or followed with his eye the path of a comet, or has had ocular demonstration of the strange properties of that ether the existence of which ranks high among scientific certainties.

In her investigation into the subject of the miraculous, it behoves science to take account of the three kinds of evidence. To a person who has witnessed (or believes he has witnessed) a miracle, the first kind of evidence—that given by his own observation—will probably be the strongest, being first-hand, and appealing directly to consciousness; yet it may be greatly reinforced through the testimony of others who have either observed the phenomenon themselves or are acquainted with people who have done so, or through a logical affirmation that it was probable or even necessary.

Those who have not personally witnessed the miracle are of course without direct consciousness of the first kind of evidence, and must rely on testimony and reasoning; though here also the testimony is based on observation. It does not follow that the whole evidence in this case is weaker than in the first, for that supplied through testimony and inference may be of sufficiently greater strength. We may remind ourselves of this when we come to consider the Scripture miracles.

It is to be noted that each kind of evidence has its danger, against which science in her investigation has to guard. Observation may be rendered worthless by hallucination, or by inattention. (As Mill remarks, some people see more, and some see less, than there is.) Testimony may be rendered worthless by excessive credulity or incredulity, by prejudice, by a habit of lying, by a desire to make a sensation, or by other causes. Inference may be vitiated by bias, by insufficient evidence, by mis-estimation of due weight and proportion in the evidence, by mistake as to its character, by illusions. In considering a miracle, or any other extraordinary and exceptional event, precaution on these points is more urgent than it is with regard to ordinary events. An exceptional occurrence cannot lay claim to scientific belief unless the testimony to it is also exceptional. Whether certain testimony is, or is not, exceptional, is a matter for investigation. Science is as much within her right in inquiring into the character of an alleged miraculous phenomenon as she is in inquiring as to whether iron

is a metal, or soda is an alkali, or mesmerism is a species of (animal) magnetism.

Should it be objected that miracles imply the supernatural, the answer is that the existence of the supernatural is among the strongest affirmations of science. Though daily occupied with matters cognizable by the senses, science is ever endeavouring to penetrate the veil of the unseen. Unsatisfied with her tiny heritage of the known, she presses through all limitations toward the vast stretches of the unknown, and in a great solitude lifts up her hands unto God. "The desert," says the Arab, "is the garden of Allah." To science "an atheist in the desert is unimaginable." That science testifies to the existence of the supernatural is recognized by leading scientists and others. Lord Kelvin tells us that "science, if you think truly, forces to a belief in God." Stewart and Tait* say that "the existence of the Creator of all things is absolutely self-evident." Newton† declares that "The First Cause certainly is not mechanical." H. Spencer speaks of "the one absolute certainty that we are ever in the presence of an Infinite and Eternal Energy from which all things proceed." It is also evident that God is a Person; for, being the First Cause, He cannot be limited, but He would be limited were He without consciousness, will, or any other attribute of personality. Another thing worth our notice in this connection, as has been recently pointed out by A. T. Schofield, M.D.,‡ is that science, in its inquiries into nature, always proceeds on the supposition that she is intelligible to us, and therefore that she is the work of Mind infinitely greater than, but not infinitely dissimilar from, our own minds. Since it is the function of science to examine into every phenomenon which takes place in nature, and since she bears witness to the existence of a Supernatural Person, it follows that miracles are proper objects of her attention.

II. *Miracles in General.*—(a) Are miracles possible? (b) Are miracles probable? (c) Have miracles actually occurred? —

(a) The first thing to be determined in a scientific investigation of miracles is—"Are they possible?" They are occurrences which, by hypothesis, are exceptional and strange, apparently interrupting the continuity of nature. There are,

* *The Unseen Universe.*

† *Optics*, 384.

‡ "Science and the Unseen World," a paper read before the Victoria Institute, January 18th, 1909.

however, many such occurrences which are recognized by science as established facts. Earthquakes, the Noachian Deluge, the burning up of stars, the odd behaviour of radium, etc., come under this category. So far, then, there is no impossibility in the occurrence of a miracle. But is any existent cause adequate to its production? Our definition finds the adequate cause in the supernatural, and there only. If the supernatural exist, miracles are possible; if the supernatural do not exist, miracles are impossible. Occurrences may take place which look like miracles, but they are not really miracles. They are either impostures, or merely natural marvels. To atheism Divine miracles are, in the nature of the case, impossible; the atheist must necessarily reject them, for every effect, and therefore every miraculous effect, requires for its production an adequate cause, and the adequate cause in this case the atheist denies. But atheism and science are two very different things. Science (as we have seen) affirms the existence of the supernatural, and therefore of a cause adequate to the production of miracles. She tells us that such occurrences are (intrinsically) possible. "If," says our late President, Sir George Stokes,* "we think of the laws of nature as self-existent and uncaused, then we cannot admit any deviation from them. But if we think of them as designed by a Supreme Will, then we must allow the possibility of their being on some particular occasion suspended."

And he goes on to say that it is not necessary, "in order that some result out of the ordinary course of nature should be brought about, that they should even be suspended; it may be that some different law is brought into action whereby the result in question is brought about without any suspension whatsoever of the laws by which the ordinary course of nature is regulated." (According to J. S. Mill,† "An impossibility is that, the truth of which would conflict with a complete induction, that is, with the most conclusive evidence which we possess of universal truth." But a "complete" induction must obviously take account of and include the alleged miraculous occurrence itself. Mill points out‡ that in the case of an alleged miracle, the usual effect of a natural law is defeated "in consequence of a counteracting cause, namely, a direct interposition of an act

* Gifford Lectures, 1891, pp. 23, 24.

† *System of Logic*, vol. ii, 7th Edition, p. 169.

‡ *Ibid.*, p. 164.

of the will of some being who has power over nature ; and in particular of a Being, whose will being assumed to have endowed all the causes with the powers by which they produce their effects, may well be supposed able to counteract them." In this connection, he quotes Brown's* remark that a miracle is no contradiction to the law of cause and effect ; it is a new effect, supposed to be produced by the introduction of a new cause.

The law of causation proves the existence of the supernatural :—Consideration of any natural phenomenon shows us that a series of phenomena follow it, and another series precede it. It is a link in a "causation chain" or chain of effects, with a multitude of sequences and a multitude of antecedents. Now this multitude of effects must be either infinite or not infinite. If infinite, then the power producing this infinite effect is infinite, and is therefore the attribute of a Supernatural Being. If, however, the chain have a beginning, a great First Cause exists which, by the supposition, is supernatural.† In any case, then, the supernatural exists. An adequate cause for miracles exists.

But the possibility of miracles has been contested on two grounds—(1) That they are violations of the laws of nature, therefore contrary to experience ; (2) That they are dissonant from the character of God, and their occurrence would imply that He is inconsistent with Himself.

The first argument has been made famous by Hume, and contains a *petitio principii*. There is need to define this definition: What is "violation"? What is a law of nature? What is contrariety to "experience"? A change in the usual order of natural phenomena does not connote a violation of any law. The natural force which was working before continues to work still, but a new force having come to work with it, these two forces are (in accordance with the principles of physics), equivalent to a third force—their resultant, of which the phenomenal expression is of course different from that of the original single force. There is no "violation" in the phenomenon being altered; there would have been violation, if to a new and different force there did not correspond a new and different effect. A cricket ball, falling right upon the wicket, is stopped by the bat, and sent high up in the air presently to end

* *Inquiry*, Notes (A) and (F) in the Appendix.

† This latter is, as we have seen, the case affirmed by science. The "causation chain would fall, were there no Hand that held it up."

its journey in the palm stretched out to catch it. But there has been no violation of the law of gravitation, the force of gravity has been acting on the ball at each stage of its adventures. An eagle beating the air with its wings and soaring toward the sun, is not violating the law of gravitation; on the contrary, the force of gravity itself assists the rising. What in truth do we mean by a "law of nature"? Mill* defines it as a uniformity, *i.e.*, it is a uniform mode of force-action. When a natural force acts in a uniform manner, this uniform way of action is its law and is called a "law of nature"; *e.g.*, "the law of gravitation" expresses a force called gravity which acts uniformly with an intensity varying as the product of the attracting masses divided by the square of the centre-gravity distance. In general, "natural laws" and phenomena represent several natural forces in combination with each other; and natural phenomena are, as we have seen, continually being modified by *will*, whether of man or of some other creature. Obviously then they may be modified, altered entirely, or created, by the Will of the Creator.

Not only does science affirm this will-modification of nature, but without it, science cannot move hand or foot. For the processes whereby she works are voluntary processes. She cannot stand or walk, write down hypotheses, prepare experiments, adjust the apparatus, or make her notes of the results, unless she modify the force of gravity by new forces introduced by will. Lotze has remarked that there is in nature a real determinism without which we could not adjust means to ends with any certainty. But this determinism is not more necessary to science than is the power of modifying it and varying its phenomena through the introduction of new forces by the will of the scientist.

If the scientist can produce natural modifications, so also can nature herself. * Man is a break in its continuity. Sir Charles Lyell† tells us that "atavism" "is an instance of discontinuity." Referring to "the dissipation of energy," Clerk Maxwell‡ tells us that "the duration of the universe according to the present order of things is . . . essentially finite both *a parte ante* and *a parte post*." Speaking of Fourier's famous theory of the conduction of heat, where the formulæ indicate a possible solution of all positive values of the time which continually tends to a uniform diffusion of heat,

* *Logic*, Book iii, c. xiv. † *Geology*. ‡ *Nature*, ix, p. 200.

Maxwell* points out that "if we attempt to ascend the stream of time by giving to its symbol continually diminishing values, we are led up to a state of things in which the formula has what is called a critical value; and if we inquire into the state of things the instant before, we find that the formula becomes absurd.† We thus arrive at the conception of a state of things which cannot be conceived as the physical result of a previous state of things, and we find that this critical condition actually existed at an epoch not in the utmost depths of a past eternity, but separated from the present time by a finite interval."

If scientists and nature herself are producers of modifications in phenomena, a supernatural being may be so also. Therefore, Hume's assertion that "a firm and unalterable experience" has established the laws of nature, that a miracle is a "violation" of these laws, and that consequently "the proof against a miracle from the very nature of the fact is as entire as any argument from experience can possibly be imagined," must be regarded as no more tenable than some other confident assertions to which we have had to listen. An endeavour to prove that an alleged occurrence is contrary to experience, by the shallow device of excluding that part of experience which is alleged to embrace it, is a pretty conspicuous instance of bad logic. "All," says Mill,‡ "which Hume has made out is that (at least in the imperfect state of our knowledge of natural agencies, which leaves it always possible that some of the physical antecedents may have been hidden from us) no evidence can prove a miracle to anyone who did not previously believe the existence of a being or beings with supernatural power, or who believes himself to have full proof that the character of the Being whom he recognizes, is inconsistent with His having seen fit to interfere on the occasion in question." Lord Grimthorpe observes that Hume's "experience" "*is only the one-sided experience* of all the non-miraculous events in the world. A man who propounded a new scientific theory on the ground that it explains all the known phenomena except one obstinate set of them which he cannot get rid of, would be laughed at—or rather ought to be, and would be if so-called science had not become so depraved by prejudice and timidity."

An argument against the possibility of miracles which is more plausible than Hume's, though not so well known, was

* Bradford Lecture, see *Nature*, viii, p. 441.

† This is in agreement with Mill's remark that a uniformity may cease to be a uniformity, as when a white blackbird was discovered.

‡ *Logic*, 7th Edition, p. 165.

put forward by Spinoza* as a consequence of his pantheistic system. He says—"But if you will have a miracle to be such a rare effect, which is absolutely above, or (which really is all one) contrary to the laws of nature, or which cannot possibly follow from her fixed immutable order, then I dare not believe that any such miracle hath ever happened in nature, lest I oppose God to God, that is, admit that God changes His own decrees, which from the perfection of the divine nature, I know to be impossible." This curious argument asserts that if at any time it has pleased God to work in nature in some particular manner, the perfection of His nature (or character) for ever precludes Him from working in any other manner, however different the conditions or circumstances. Such an assumption is absurd. Nature herself refutes it by pointing to catastrophes. Man's free will is continually altering natural phenomena, removing old phenomena and producing new, changing physical configuration and the character of soils and climates. Shall we recognize freedom in the creature, and deny it to the Creator? The "fixed immutable order" in nature, spoken of by Spinoza, may be fixed and immutable for a time only, then to be followed by "a new thing," after which the order may, or may not, go on as before; or the old order may not have been intermitted, but merely modified by a new force. Also the old order and the new force and the miraculous event may each be included in and form part of a wider higher† order. There is nothing "impossible" in any of these suppositions. In his Gifford lectures‡ already referred to, Sir George Stokes gives, as illustrating the effect produced by a new force, the case of a clock with an iron pendulum, the rate of which, determined by the laws of motion and gravitation, was well known. "Suppose," he says, "that on one occasion it went much faster for an hour or two, and then resumed its usual rate. It may have been that someone designedly put a powerful magnet under it, which after a time was taken away again. The acceleration of rate was here produced, not by any suspension of the laws of motion or of gravitation, but by bringing into play for a time a special force which left the laws of motion and of gravitation perfectly intact, and yet brought about the result that we have supposed to have been observed." Different

* *Miracles, Premonition.*

† Babbage reminds us that "A miracle, instead of being a violation of a law, is in fact the most eminent fulfilment of a vast law." (*Passages from the Life of a Philosopher*, 1864, p. 394.)

‡ p. 24.

phenomena may even appear to be quite contrary to each other, when in reality they work in harmony and are in fact mutually promotive; for example, the motion of any part of a carriage wheel is continually taking opposite directions, yet these opposite motions assist each other, and harmoniously work to set forward the motion of the carriage in a straight line.

It is interesting to notice, as illustrating the cogency of his argument, that Hume himself admits that (according to his principles) "the Indian who refused to believe that water could freeze reasoned justly." His error lay, Hume thinks, in his not taking account of the new* conditions, conditions different from those of Siam; and Hume's own error lies in the same direction.

Spinoza also answers himself when he declares that by an impossible thing he means anything supposed to happen "in nature at large" repugnant to its laws, for the laws of nature being the laws of God, such an event would be "equally repugnant to the decrees and intelligence of God"; and tells us that by "nature at large" he means not matter merely but "an infinity of other things as well."†

Another argument, besides those which have been considered, is sometimes adduced against the possibility of miracles, namely, that they are inconceivable. Although H. Spencer sought to erect conceivability into the decisive test of truth, Mill has shown that it is not anything of the sort, and therefore there is nothing in the argument based upon it. He points out that our conceivability varies with our knowledge. Things now familiar, *e.g.*, antipodes, and talking by lightning, once seemed inconceivable.

There remains yet an objection—it cannot be termed an argument—against the possibility of miracles, which is cherished by a certain type of mind. It consists in simple denial. "Miracles do not happen." By a sweeping statement devoid of all proof the question is settled. Even M. Arnold was not ashamed to resort to alogism of this description. Another alogist, R. W. Macan (in his essay on *The Resurrection of Christ*, 1877, p. 116, note) asserts that "If miracles are possible, history is impossible,"—an assumption which begs the question. Westcott (in his *Gospel of the Resurrection*, 4th

* See *Inquiry*, Sec. X.

† "Me hic per Naturam non intelligere solam materiam, ejusque affectiones, sed præter materiam, alia infinita" (*Tractatus . . De Miraculis*, c. vi).

edition, p. 278) remarks that the alogist bars his own progress into truth, being self-committed to a foregone conclusion which he ought first to have established.

Nothing is impossible with science that does not contradict some truth.* Huxley says "denying the possibility of miracles seems to me quite as unjustifiable as speculative atheism." Stupid incredulity may disfigure some scientists who refuse to recognize truth outside their own little specialized fields of study, but this narrowness is in no sense an attribute of science. It is not the fault of the world if the villager has never travelled. We conclude, from fair and careful examination, that science affirms the possibility of miracles.

(b) Are miracles probable? What does science tell us on this point? Certainly a phenomenon may be very rare or unusual, *e.g.*, an eclipse or a comet, and yet its occurrence may be probable. A miracle, however, is more than an unusual occurrence—it is produced by the action of the supernatural; and it is contended that science does not reach to such action. It may be replied that, in the case contemplated, the action is expressed by some phenomenon in nature, and that science is competent to take note of and report upon the phenomenon.

That miracles are improbable has been strongly urged by Hume, whom we have already seen denying their possibility. Hume argues that it is more probable that the evidence for the occurrence of a miracle is false than that there has been any deviation from the course of nature, and that testimony to the miraculous should not be accepted unless it were more miraculous that the testimony be false than that the miraculous event be true. And he says that "even in that case there is a mutual destruction of arguments, and the superior only gives us an assurance suitable to that degree of force which remains after deducting the inferior." In another place, however, he gives a hypothetical case in which he allows that an event of very great improbability ought, if supported by very strong testimony, to be believed. Mill points out† that "many events are altogether improbable to us, before they have happened, or before we are informed of their happening, which are not in the least incredible when we are informed of them, because not contrary to any, even approximate, induction. In the cast of a perfectly fair die, the chances are five to one against throwing

* Science does not reject anything simply because it is new. She investigates.

† *Logic*, vol. ii, pp. 170-1.

ace, that is, ace will be thrown on an average only once in six throws. But this is no reason against believing that ace was thrown on a given occasion, if any credible witness asserts it." And he reminds* us that "In the instances on record in which a great number of witnesses, of good reputation and scientific acquirements, have testified to the truth of something which has turned out untrue, there have almost always been circumstances which, to a keen observer who had taken due pains to sift the matter, would have rendered the testimony untrustworthy." We may also notice that Hume's way of putting the matter, since it regards testimony as the sole evidence for miracle, is not just; since this evidence may not be restricted to testimony, but may include the conditions and circumstances of the case, the relation of the event to other events before or after, and also its power of explaining what may otherwise be inexplicable.

Spinoza's† objection to miracles as probable is based upon his conception of the Divine character. We must beware, he says, of "running into the dangerous error of the Multitude that God hath created Nature so impotent, and given Laws and Rules so barren, as that he is compelled sometimes to help her by new ordinances and supplies of Vertue, in order to her Support and conservation, and that things may succeed according to his Intention and Design. An Error than which nothing is more alien from Reason, nothing more unworthy the Majesty of the divine Nature." "The power of God and the power of Nature are," he says, "one and the same." From this postulate, he draws the conclusion that whatever takes place in nature, since it takes place by the power of God, takes place by the power of nature. "Nature," in his pantheistic theory, is a form of God; therefore, if a miracle were to occur in nature, it must be explicable by natural causes,—in other words, it could not really be a miracle. "For," he says,‡ "if we understand the natural causes of the fact, however rare it be; or if we have often seen the like done before, though we do not conceive the natural cause thereof, we no longer admire it, nor call it a miracle." That God should change His own decrees, "from the perfection of the Divine nature" Spinoza holds to be absurd.

* *Logic*, vol. ii, p. 169.

† *Miracles no Violations*, pp. 7, 8.

‡ *Miracles*. Similarly, Hobbs (in *Leviathan*, Part iii) regards a miracle as "a work of God which men admire or wonder at," and again, in the same chapter, as "a work of God beside His operation by the way of Nature ordained in the Creation."

This reasoning evidently rests on a *petitio principii*. It is assumed that, because God works in nature, He is limited by nature, so that it would be contrary to His perfection to work in any other way. This is as absurd as to say that because a scientist works in some particular field of activity, therefore he cannot, without loss to some extent of character, work in any other,—that a mechanician may not be also an astronomer, that a biologist may not be a chemist. In fact, the limitation in working which Spinoza seeks to attribute to God is even more absurd, since God is almighty and His attributes are infinite.

Another argument made use of by Spinoza against any occurrence of miracles is that this would imply an after-thought on His part. It would imply that He found He had made some mistake which He desired to correct. It would not imply anything of the kind. The assertion has no scintilla of evidence.

The reasoning is far from convincing. A belief in the immutability of "natural laws" requires to be corrected and modified. Science instructs us that there are such things as earthquakes and other catastrophes, that discontinuity is a factor in nature—that all things do not continue as they were "from the beginning of the creation." Inattention to the teaching of nature with regard to God does not unfrequently accompany familiarity with her laws. And nature worship is not among very rare occurrences, nor has idolatry been found to be at all dependent upon miracles. Obviously, men's spiritual and moral condition might be such that it might be more important that they be reminded of God's existence than of His immutability. There might be urgent need to call their attention to the presence and power of the supernatural—to impress deeply the forgotten truth that God is the Living God and interests Himself in His creatures. It is worth remarking that Spinoza, in arguing from miracles wrought by false prophets, does tacitly admit that miracles may after all take place, and that he has no justification for the assumption that, since these miracles are injurious, all miracles are so.

An argument for the improbability of miracles, that has had attraction for some minds, is stated by Wegscheider as follows:—Miracles are "irreconcilable with the idea of an eternal God consistent with Himself." Undoubtedly God is consistent with Himself. The words of Hooker* are true—"Let no man doubt but that everything is well done, because the world is ruled by so good a Guide, as transgresseth not His own

* *Ecclesiastical Polity*, book i, c. 2 *sub fin.*

laws." But, as is acutely remarked by McCosh*, the objection "assumes that because nature is an expression of God's will, there can be no other expression." What is the meaning of consistency? The objection finds it in natural laws, but not in miracles. Yet, as is pointed out by Lias†, "not only is the principle of the counteraction of force by force a principle of nature, but the *same* forces sometimes act in the most opposite way." Heat, for instance, usually expands, but it contracts iodide of silver and some other bodies. A charge of electricity sometimes attracts, sometimes repels. Virgil told us long ago that "This wax softens, and that clay hardens, through one and the self-same fire." It is not that heat acts inconsistently; it is that it acts consistently. The force acts consistently, the difference (or contrast) in the resulting phenomena is produced through the difference of the conditions in which the action takes place.

Water when being cooled down to 0° C. becomes denser and denser until it reaches 4° C., and then becomes rarer. The change is not in the force, it is in the conditions. If, the essential conditions remaining the same, the effect was a different phenomenon, this would argue inconsistency in the acting force; but inconsistency would be no less indicated if, the essential conditions being changed, the resulting phenomenon were not changed also. If from the sphere of matter, we rise to that of psychology and ethics, and consider human conduct, we recognize that the man whose outward actions are always the same toward the same persons, irrespective of any change in them and taking no account of altered relations and conditions, is not a consistent man but an inconsistent fool. The really consistent man is he whose outward action embodies consistent principle, who regulates conduct by consistent character. If this be true of man and by parity of reasoning, of any rational and spiritual creature, may we not reverently believe that it is true with regard to God that His actions are not cast in a rigid monotony, but are ever accordant with His character, and therefore take account of the varying circumstances and special needs of His creatures? If, then, the special circumstances arose, God, in working a miracle, would be perfectly consistent with Himself.

We may look briefly at yet another argument adduced to prove the improbability of miracles. Bey

From time to time in human history "miraculous" occurrences

* *The Supernatural in Relation to the Natural*, p. 128.

† *Are Miracles Credible?* p. 23.

have been alleged which have turned out to be no miracles at all. Examination has shown them—so far as “miraculous”—to be the progeny of ignorance, or superstition, or fraud. Science has discovered that in some cases the “miracle” is a natural marvel explicable by natural causes, that in others the extraordinary effect is referable to psychic forces stimulated by credulity, and in others the explanation lurks in a network of lies. This has been insisted on as a proof that all miracles are shams, or at all events the occurrence of a genuine miracle is a matter of great improbability. The conclusion is however more than the premises will bear. Indeed, it may be said that the wide-spread belief in the miraculous is itself an argument that the miraculous exists or has existed.

It may also be said that it were not very convincing to contend that, because science discovers that there are untrustworthy banknotes and bad shillings, therefore all banknotes and shillings are of this character.

The existence of the counterfeit does not disprove, but proves, that of the thing counterfeited—there would be no counterfeits were there no realities. The objection thus retorts upon itself.

Thus, each one of the various arguments which have been held to show that miracles are *a priori* improbable is seen to fail, and we are warranted in affirming that science does not say that miracles are *a priori* improbable.*

Does science say that they are probable? In pronouncing upon the probability or the occurrence of any *phenomenon*, miraculous or non-miraculous, science takes account of (1) the *nature* of the phenomenon; (2) the *conditions* under which it is alleged to have occurred; (3) the character of the *testimony* to its occurrence.

(1) In the case of a miracle, the nature of the phenomenon involves the marvellous and the supernatural. (2) The conditions include the character of the worker and the characters of the persons for whom the miracle is worked, and the relations mutually subsisting between worker and witnesses. (3) The character of the testimony is dependent upon the trustworthiness—moral and intellectual—of the witnesses. A scientific investigation will examine and report upon each and all of these matters, and it is obvious that any particular

* Mill remarks that “the only antecedent improbability which can be ascribed to a miracle is the improbability of the existence of a New Cause,” namely, “a direct interposition of an act of will of some Being who has power over nature.” (*Logic*, 8th Edition, vol. ii, 167–8.)

"miracle" or set of "miracles" must be investigated separately, and stand or fall on its own merits according as it does, or does not, satisfy the tests.

In connection with the value of testimony, it may be pointed out that it varies with the probability that what the witness states is fact, which probability will have two factors—the antecedent probability of the event, and the probability that the witness is truthful and competent, *i.e.*, that he is neither a deceiver nor deceived.

If a person relates that he has just seen a brown dog running along the road we believe it as a matter of course, unless we have grounds for thinking him to be a liar; if he says that he has seen a white blackbird we may think that he is mistaken or false, and if he told us that without any visible means he had been communicating in converse with people more than a thousand miles away (and we did not know anything of wireless telegraphy) then, on account of the antecedent improbability—as we suppose—of this event, we should probably attach no value to his testimony, unless upon other grounds we knew that it must be trustworthy. Yet, granted the narrator's truthfulness, our reluctance to believe would be attributable to our ignorance. Thus, what is probable (or improbable) to us is dependent upon our knowledge of the matter. What seems to us to disagree from known truth (or, from what is believed to be so) is to us improbable; what neither disagrees nor agrees is neither improbable nor probable; what agrees is probable, and if the measure of agreement is, on the whole, very great, then the probability is very great. As regards the event itself, its occurrence or non-occurrence is certain, and entirely independent of our ideas; but our view of its probability (or otherwise) is necessarily conditioned by the quality and the quantity of knowledge, with regard to this or to some similar event, already in our possession.

We see then that, since what is to us improbability or probability is dependent upon our actual knowledge of the matter, the judgment of science concerning miracles in general, *i.e.*, miracles considered simply as miracles, is that they are not *a priori* improbable, and may or may not be probable. And, concerning any particular case, science enjoins that it be considered specially and on its own merits, with the application of the three tests already mentioned.

(c) Let us now ask science whether miracles have actually occurred. Science answers in the affirmative. She tells us that events have undoubtedly taken place which come within

the definition of miracles given early in this Essay. Among these events are creation of this world of matter, creation of living organisms, and the character of the Lord Jesus Christ. That these things are miracles (according to our definition) will be admitted by all scientists, even by evolutionists, except those who assert that matter is eternal, and even they must perforce admit the last two examples. It is, however, pretty evident that if the material atom is, as has been pointed out by Herschel and Clerk Maxwell, "a manufactured article," and if matter's changes and its modifications are not self-originated, science is certain that it has been created. Science also asserts that the great doctrine of biogenesis put forward by Redi "is victorious all along the line,"* and that life upon this earth must have had a beginning. And, with regard to the character of Christ, science recognizes that (to quote the words of Renan's famous admission) "it would require a Jesus to invent a Jesus."

Adopting the definitions at which we arrived on pp. 3 and 4 of science and miracle respectively as "the investigation and study of things and phenomena in nature, with a view to their explanation and correlation in the great order of the universe," and "an exceptional marvel in nature, not explicable by natural causes, and therefore directly attributable to a supernatural cause,"† we have been led, by a scientific investigation into Miracles in general, to give the following answers to the questions with which we set out, namely:—(a) Are miracles *possible*? Yes, they are. (b) Are miracles *probable*? They are not improbable, and may or may not be probable. Any particular case of alleged miracle should be examined specially on its own merits, as to‡ (1) the nature of the phenomenon, (2) the conditions under which it is alleged to have occurred, (3) the character of the testimony to its occurrence. (c) Have miracles actually occurred? Yes, they have.

III. *The Bible miracles.*—That science affirms their possibility we have seen already, since she affirms that of miracles generally. Our investigation will therefore concern itself with their probability *a priori*, and their actual occurrence.

(a) Were the Bible miracles probable? (1) Might they be expected from what we know of their nature? They were not purposeless manifestations of mere power, but were always *ancillary* to Divine *teaching*, helping men to recover that knowledge of God which through sin they had lost, the

* Huxley.

† See, however, footnote to p. 4.

‡ See p. 20

knowledge of God as Spirit, Light and Love. Though miracles might not themselves directly teach these truths—truths of the highest importance for man to know, they would certainly enforce them. A miracle would have no little value as a credential of the prophet's authority, and as a "summons* to attention" to the revelation of which he was the bearer. It is, therefore, probable that if a Divine revelation were given to beings who did not love God and were inattentive to His Will, this revelation would be accompanied by miracle, in order to render it effective. This appears to be recognized even by so stubborn an opponent of the miraculous as Matthew Arnold. He allows† that "Popular religion rests" (the belief in God's existence) "altogether on revelation and miracle," and "That miracles, when fully believed, are felt by men in general to be a source of authority, it is absurd to deny . . . It is almost impossible to exaggerate the proneness of the human mind to take miracles as evidence, and to seek for miracles as evidence." They are, then, to be looked for in connection with a Divine revelation. In other words, the Bible miracles are probable from the nature of the phenomenon.

(2) If we consider the conditions and circumstances under which these miracles are said to have been wrought, we must take account of the characters both of the Worker and those on whose behalf the work was wrought, and also of the relations between them and Him. We see God's character known as holy and good, and man's as sinful and disobedient. The relation of God to man being one of love, and that of man to God being one of alienation, God is seeking to bring His lapsed creature back unto Himself; that, in renewal of the broken Communion, the spiritual law—law of the spiritual nature—violated at the Fall, may be re-established, and the true spiritual order be restored. Lias remarks‡ that the purpose of the Divine revelation would be "to discipline the mind to that seriousness, earnestness, humility, teachableness, self-restraint, industry, perseverance, which are necessary elements of all true goodness." It would also tend to develop the not less important qualities of "awe and reverence, which are connected with the best part of man's nature." "A revelation made by§ miracles is likely to produce such results," i.e., to produce this moral

* Smythe Palmer, in the introduction to Trench's *Notes*.

† *Literature and Dogma*, pp. 56, 57.

‡ *Are Miracles Credible?* p. 111.

§ The words "by," as used here, evidently means "accompanied with."

training and development. For "the occurrence or reported occurrence of miracles compels our attention, and sets us upon inquiring from what source such marvels proceed. When joined to the moral and spiritual force of what is thus revealed it convinces the inquirer that this strange interposition of an external power into the world could only have been for his good, and that a doctrine so supported, and so intrinsically ennobling in itself, must surely have come from God."

Therefore, the Bible miracles are *a priori* probable from the nature of the phenomenon, and also from the conditions under which they are said to have taken place.

(b) Let us now apply our three tests (p. 20) to answering the question—Did the Bible miracles actually occur? (1) In connection with the nature of the phenomenon, we note that the character of these miracles is such that, though they be themselves not necessarily didactic, they always are *ancillary* to some teaching concerning *God*, and of a nature to render this teaching effective.* If the need of man and the goodness of God insured the certainty of revelation, it is also certain that the theophany would be given in the way *best* fitted to render it effective, and (as it is pointed out by Aquinas) this way is the way of miracle. *Science* also selects the instruments that are best adapted to the purpose in view. Compared with Bible miracles, the spurious miracles which have from time to time attempted to delude mankind exhibit a difference of character so great as to be best described as contrast, and are all explicable by causes non-supernatural. It is further to be noted that the Bible miracles are not mere accompaniments of the revelation, but are inseparably bound up with it. A very important feature in them is that they *explain*† what is otherwise inexplicable. The Exodus of the Israelites becomes unintelligible if the miracles said to have attended it did not really take place, and no explanation is (in such case) possible of the memorial feast of the Passover. The faith of Christians is bound up with the miracles of the Incarnation, the Resurrection, and the character of Christ. Take away these miracles and you take away Christianity. They explain‡ Christianity and nothing else does. They give the key to its

* "Signs," says Sir Robert Anderson, "are essentially evidential."

† On the principles of Mill's inductive methods of Agreement and Difference. (*Logic*.)

‡ It is not only that the miracles fit into the facts as a key into a lock, but that the lock is fitted by no other key.

doctrines; they account for its wonderful rise and spread and the divine vitality of its continuous history. If Christianity is true, they are true also. It was well remarked by Bishop Douglas* that the more thoroughly Christianity is examined the stronger appear the proofs of its truth. “. . . the closest scrutiny and most impartial examination of the evidences which support those miracles on the credibility of which the truth of the Revelation in the New Testament is built, have served only to satisfy me that Christianity is founded upon a rock, and that every attempt to sap its foundations tendeth to discover their strength the more.” As Dr. Salmon expresses it, “a non-miraculous Christianity is as much a contradiction in terms as a quadrangular circle; when you have taken away the supernatural what is left behind is not Christianity.” “Miracles,” says Smythe Palmer, “are of the essence of Christianity. No one who reads the Bible with a candid and impartial mind can be of another opinion.” Archbishop Temple† remarks—“It is not possible to get rid of miracles from the history of the Apostles. They testify to our Lord’s Resurrection as an accepted fact, and then make it the basis of all their preaching. They testify to our Lord’s miracles as a part of the character of His life.” And the truth of Christianity is bound up with the perfection of the Divine character. To quote the words of M. Arnold,‡ “Christianity is immortal; it has eternal truth, inexhaustible value, a boundless future,” and “certainty and grandeur are really and truly characters of Christianity.” “. . . *Sine viâ non itur*, and Christianity can be shown to be mankind’s indispensable way.”§

Of Christ’s Resurrection it has been said that “In one form or other pre-Christian history is a prophecy of it, and post-Christian history an embodiment of it.” “It may indeed be said that the Church was founded upon the belief in the Resurrection, and not upon the Resurrection itself . . . But belief expressed in action is for the most part the strongest evidence which we can have of any historic event.”|| The existence of a Christian society is explained by the fact of Christ’s Resurrection, and by that only. Westcott also notices that this

* In *The Criterion*, a work of great ability.

† 7th Bampton Lecture.

‡ *Literature and Dogma*, p. 8.

§ *Ibid.*, p. 7. Similar is the testimony of the Government Report on S. African Affairs :—“Hope for the elevation of the native races must depend mainly on their acceptance of Christian faith and morals.”

|| Westcott : *The Gospel of the Resurrection*, p. 107.

Resurrection meets and satisfies man's aspirations after God and a future life, and responds to the religious intuition.

An objector has propounded the curious argument that "One or other alternative must be adopted:—If Jesus possessed His own body after His resurrection, and could eat and be handled, He could not vanish; if He vanished, He could not have been thus corporeal" (*Supernatural Religion*, iii, 462). The argument is an interesting instance of the logical fallacy *petitio principii*. As Westcott points out, "the very point of the revelation lies in the reconciliation of these two aspects," and it should be borne in mind that a permanent memorial of the event was established from the very first—a memorial so striking as to involve the commemoration of the Death upon the day of the commemoration of the Resurrection.

Not less miraculous than His Resurrection is the Redeemer's Character—a Character unique, and impossible to human invention, the impress of God upon humanity. If the existence of the Christian Church finds its explanation in the Lord's Resurrection,* so in His character lies the explanation of the Christian character produced by the Spirit of Christ in every disciple. The Resurrection and the Character both pre-suppose the Incarnation—"God manifest in the flesh," and these miracles explain what is otherwise inexplicable. Therefore, science affirms their occurrence. The perturbations of Uranus were explained by the existence of the unknown planet Neptune, and nothing else explained them; therefore science affirmed that existence. The phenomena of light are explained by the existence of a luminiferous ether, and by nothing else; therefore science affirms the existence of this ether. On the same principles, science affirms the existence of the Bible miracles which we have been considering; she tells us that they have actually occurred.

The character of Bible miracles is always in accordance with their origin and purpose, they are evidential, being credentials of the truth of the teaching and the authority of the teacher. Christ's miracles were not tentative. "They bear the impress of His own holiness, and He ever uses them as the means of winning to the cause of goodness and truth those who witnessed them."

Christ's mission is verified in the experience of Christianity,

* Ebrard has pointed out that such an ordinance as the Lord's Supper could not have grown up accidentally and gradually.

† Origen's reply to Celsus.

and miracles are an integral part of that mission. Jesus of Nazareth was "a man approved of God . . . by mighty works and wonders and signs which God did through Him."* It is evident that these three terms convey the character of a Bible miracle as impressing the mind with the presence and power of God (a "mighty work")—as arousing and fixing attention (a "wonder")—as accrediting the teaching and authority of His messenger (a "sign"). Trench has a remark† that miracles are very properly credentials, for "Credulity is as real, if not so great, a sin as unbelief"; and, in the case of Bible miracles, the miracle is an important part of the revelation.

(2) We have seen that a scientific investigation into their *character* leads to the conclusion that the Bible miracles did actually take place. Let us next investigate the *conditions* under which they are alleged to have occurred. What was the character of man? What the character of God? What the relations between God and man? The character of man was that of a being who had not only fallen but was still falling, whose heart had departed from the Living God, so that he "worshipped and served the creature more than the Creator."‡ Man's understanding had become darkened as, blinded by a foolish heart, he sought satisfaction in vicious indulgences. Wise men and philosophers from time to time arose and sighed for the lost knowledge of "The Good," and shook the torch of truth that so their fellows might see the better way. But human nature could in no wise lift up itself. The torch went out, the darkness grew thicker than before, and the result was the failure of the philosophy and the lamentation of the philosopher. Horace (Carm. iii, 6) draws a terrible picture—"Ætas parentum, pejor avis, tulit Nos nequiores, mox daturos Progeniem vitiosiore."§ Such was man's moral and spiritual condition, such the bluntness of any spiritual perception he still retained that (as is remarked by Lias) it may be doubted whether any revelation from God, if unaccompanied by miracles, would have had power to command his attention. If, then, a revelation were made to him it would be accompanied by miracle, probably in order to insure its reception, in any case to increase its effectiveness. If the revelation was certain, the

* Acts ii, 22.

† *Notes*, p. 21. Cf. The Lord's words in John v, 36; xv, 24.

‡ Romans i, 25.

§ Cf. Juvenal, *Satires*.

miracles were certain. Was the revelation certain? There could be no doubt about the need of man. The character of God was that of the Almighty, and was that of the Good—the Good after whom Plato had longed, the Good who was, from the very moment of the Fall, continually working to bring man back to Himself. God's character being such, and the matter of such supreme importance to man, can there be any question that an effective revelation, *i.e.*, a revelation accompanied by *miracle*, was actually given?

The facts that, in the interests of his higher nature, the material universe is continually being modified by human will, and that man's spiritual well-being is vastly more important than uniformity among natural phenomena, may fairly be held to remove any difficulty that may be felt with regard to Divine alteration of any of them. There is no violation of law, but the introduction of a new force under new circumstances, so that in these new circumstances, "the laws of nature" may be in harmony with a higher law. It has been pointed out (by Trench)* that the miracles performed by our Lord, as credentials of His mission, were the very opposite of violations of nature; for they all tended to bring man back to God† and restore that original harmony between man and nature which had been violated by sin, *e.g.*, when the Lord caused the deaf to hear and the dumb to speak, and healed the paralytic, He to that extent undid the violation caused by sin, and brought the physical state of the sufferer into harmony with nature.

Having regard to God's known character, it were impossible to believe that, when circumstances had arisen in which man's highest interests required a manifestation of God's will enforced by miracles, such miracles did not take place.

The ordinary uniformities of nature have been arranged by infinite Love as best for him in ordinary circumstances; the extraordinary exceptional occurrences called miracles were similarly arranged as best for him in those extraordinary circumstances in which they took place. These two classes of phenomena are no more opposed to each other than is the huge Nasmyth steam hammer to the humble tool which serves to illustrate a schoolroom lecture on elementary mechanics. They

* *Notes.*

† "Atheism . . . deadened the understanding, while it disgusted the heart." Frederick Harrison, in (1902) New Year's Day address to the Positivist Society.

both work together as different notes forming one harmony; for both are equally manifestations of one and the same law—that highest law which governs the universe, the law of Love. And if we take note of the *results*—results as blessed as they are wonderful—which have flowed to man as a consequence of accepting Christianity, and reflect that apart from miracles, Christianity had been impossible, Science leads us to say that if their existence were not known, it would have to be assumed, since for every effect there must be an adequate cause.

That the Bible miracles are genuine is also apparent from consideration of the other facts connected with the alleged circumstances of their occurrence. They were not idle exhibitions of power,—there were, so to speak, no “unnecessary” miracles. They were done publicly,—“this thing was not done in a corner.” Frequently they were performed before hostile audiences, *e.g.*, before Pharaoh and the Egyptians, and before Jews “filled with madness.” They were opposed by the authorities, and courted inquiry from an incredulous people, where they were said to have taken place, and are afterwards They were believed at the times and in the places when and often alluded to as accepted facts; their adversaries, numerous and powerful and aided by the authorities, were unable to prove even one of them to be false,—they might try to ascribe them to magic, but they did not deny their existence. Sometimes, as in the cases of the Exodus and Christ’s Resurrection, they are commemorated by public memorials instituted at the time and continued ever since. Also, they took place under conditions such that “men’s senses were well qualified to judge of them.” Another circumstance to be noticed is their comparative rarity,—they are grouped around special epochs* or crises in human history, *e.g.*, the miracles of Moses relate to the Exodus, those of Elijah to the idolatrous degeneracy of Ahab and the people, those of the New Testament to the mission of God’s incarnate Son. Now these various facts of circumstance are not such as accompany spurious miracles, but they do accompany Bible miracles, therefore these are not spurious but real.

Therefore, the result of investigation into the conditions and circumstances under which they are alleged to have occurred is that science tells us the Bible miracles did actually take place.

(3) In applying to the Bible miracles our third test—the character of the *testimony* to their occurrence—our investigation

* See Lias, *Are Miracles Credible?*

specially directs itself to two points, namely, were the witnesses deceivers? and were they deceived? Firstly, were the witnesses to the alleged events deceivers? This is negated by their character. Some of them were learned, others were "unlearned and ignorant men"; but their religion had imbued them all with that strong love of truth which they taught. Babbage has shown that the improbability of the witness of five hundred* persons being false is enormous, even though the truthfulness of each was but moderate.† It is, besides, preposterous to suppose that a band of liars joined together to narrate a tissue of falsehoods most opposed to the feelings and prejudices of both rulers and people, that they should persist in teaching these‡ falsehoods at the cost of their own shame and disgrace and suffering and death, and that none of their many determined and able enemies should succeed in exposing any of their statements. The idea appears too absurd for refutation, and (so far as I am aware) the theory of imposture is not maintained, as a serious proposition, by any objector in our time.

Secondly, were the witnesses deceived? Were they the victims of enthusiasm and hallucination? This is negated by the facts that they themselves were in many cases incredulous and slow to believe, that their conduct was marked by great sobriety, that the mention of the miracle in the course of the narrative comes in quite simply just like any other known fact,—there is no touch of sensationalism, there is not a trace of over-colouring, there is an entire absence of exaggeration. And it should be borne in mind that the testimony appealed to for the truth of the miracle connects itself with more than one of the senses,—not with sight only, but also with hearing and with touch; and very sober and careful details are given in regard to place, time, and circumstance. These facts do not tally with the theory of hallucination. Nor would hallucination have continued unimpaired through many years of persecution and suffering—the fancy would have worn away,—nor would relentless enemies, of whom there was no lack, have failed to expose the folly. The Lord's Resurrection was believed, on the day of Pentecost, by three thousand Jews, within a very short time after the event occurred, and in the very place where it occurred. Peter's hearers "could visit the sepulchre, cross-

* 1 Cor. xv, 6.

† i.e., if each told the truth in ten statements out of eleven.

‡ Certainly, they would not have mentioned the Lord's prophecy of His Resurrection, had that Resurrection not taken place.

examine the guard; in fact they had unrivalled opportunities of sifting the whole matter on the spot, and no doubt they did so. The result was that they not only believed, but were ready to die for their belief. They became the most devoted of missionaries. These men were Jews, the most bigoted and obstinately conservative people the world has ever known.* Nor would hallucination tally, under the circumstances, with the extraordinary spread of the new religion as recorded by Tacitus and other writers, this new religion not only giving to men the highest morality, but also wonderfully affecting their intellectual and spiritual perceptions.† The theory of hallucination cannot be accepted by science, for it is not adequate to the supposed effect.

Nor can the belief in the Christian miracles be accounted for by what has been termed the Mythopoetic theory. It has been pointed out that myths and accretions require for their success several conditions: they require a considerable lapse of years, a people in a very rudimentary state of intelligence and training, and a very great dearth of historical information concerning the age in which the myth was supposed to originate. But in the case we are considering not one of these was fulfilled. The narrative of Christ's life and death and resurrection has been told and quoted from the beginning just as it is to-day. The times were those of a high civilization and literary culture, in which the Roman province of Judea shared. The age was specially that of history, of Tacitus, Pliny, Josephus, Philo, Livy. The mythic theory is negated by the facts.

Science declares that every effect presupposes an adequate cause. The spread of Christianity presupposes an adequate cause. The truth of the testimony is an adequate cause, and no other can be found! A geologist, looking at a rock, observes certain markings. He knows that these striæ might be produced by ice, and in the absence of ice is unaware of any competent cause, and he therefore decides that ice is actually the cause. Similarly, in view of the spread of Christianity, science decides that the testimony to the Christian miracles (of which this was an effect) was true, and therefore that these miracles were true.

We here complete our scientific investigation of Bible

* Drawbridge.

† *E.g.*, the Hebrews and the philosophical Greeks both denoted "wind" and "spirit" by one and the same word; similarly there was but one word for "breath" and "soul." They had not the distinctive words, because they had not the distinctive ideas; Christianity has given them to us.

Miracles. It has embraced* (1) the *nature* of the phenomenon; (2) the *conditions* under which it is alleged to have occurred; (3) the character of the *testimony* to its occurrence. To the inquiry—Were the Bible miracles probable? science answers in the affirmative. To the further inquiry—Did they actually occur? the answer of science is again, and very emphatically, in the affirmative. If we liken them to gold, she has made her assay and says the gold is pure. Or the Bible miracles may be compared to a string of pearls. If science seeks to know whether the pearls are genuine, she may apply chemical and other tests to the examination of their *character*; she may search into the *conditions and circumstances* in which the alleged pearls were found. Were they first found in an oyster, or in some manufacturing laboratory? And she may investigate the *testimony* of experts. Should the result of any one of these examinations affirm the genuineness of the pearls, science will be slow to believe that they are “paste”; if all the results declare their genuineness, science will not hesitate to say that they are true pearls. This, as we have seen, is the case of the Bible miracles. Science, therefore, affirms *their actual occurrence.*

With regard to other “miracles,” science is ready to investigate them and apply her tests. She welcomes every new fact, bidding her disciples not to neglect it, not to permit prejudice to block the way of truth. Her exhortation, to-day not less than in the past, is “*Ἐρχεσθε καὶ Ἰδετε.*”

APPENDIX.

On Miraculous Occurrences and “Miracles” other than those Recorded in Holy Writ.

From time to time events have taken place in human history which have been called “miracles,” but when scientifically investigated have been discovered to be no miracles at all. Of such were the supposed marvels in connection with the Punic War related by Livy, the prodigies described by Virgil,† the “miracles” wrought in the ages most appropriately termed “dark,” “miracles” by Apollonius, and those performed at the tomb of the Abbé Paris, etc.,—the etc. including various modern

* See p. 20. To the actual witnesses the class of evidence (3) would be even stronger than it is to us. But on the other hand, the class of evidence (1) is stronger to us than to them.

† *Georgics*, Line 461 in Book i.

impostures. False miracles are frequently counterfeits or absurdities, or ascribable to collusion, and performed in the interest of some powerful class. Commonly they are published in times and places far distant from those when and where they are alleged to have occurred. *They shun investigation.* They never require the *supernatural* for their explanation. If not impudent impostures they are accounted for by natural causes (including psychic and mental forces). They are well discussed by Lias,* and also by Bishop Douglas in *The Criterion*.† They fail to satisfy the tests of science.

Among really miraculous occurrences are some prayer-answers, fulfilments of prophecy going on before our eyes, and special providences. Of a false, or at any rate doubtful, character are second-sight and clairvoyance, as also what are known as spiritualistic phenomena. See, on these subjects, an interesting paper by Dr. Schofield on "Science and the Unseen World."‡ None of them is to be rejected without examination, none is to be condemned without a fair trial. *Science* is ready with her tests; her attitude towards *Miracles*—true, or false—is always that of *investigation*. Ἐρχεσθε καὶ ἴδετε.

DISCUSSION.

The Rev. A. IRVING, D.Sc., B.A., thought that, having had n share in the competition for "the Gunning Prize," he could the more readily propose a vote of thanks to the author of the essay just read, and congratulate the Victoria Institute upon the considerable value, the wide range of thought which it covered, and the catholic fairness of its tone in arriving at general conclusions. As the result of many years of study of such questions as were dealt with—his interest in them having been stimulated many years ago by the personal influence of Archbishop Benson of Canterbury, and continually refreshed and invigorated by his own scientific work at Wellington College—he had arrived at, and for years advocated, views similar to those of the author of the essay. He had, in years gone by, observed with much satisfaction a

* *Are Miracles Credible?*

† Printed in the Strand, in 1754.

‡ Read before the Victoria Institute, January 18th, 1909.

tendency in the young keen minds of some, who had been serious students of science at the Universities, to turn away from the narrow materialism of the last generation towards a more reverent hesitancy in asserting anything like dogmatic certainty or finality in conclusions, which seemed for the time to be warranted with the advance of scientific discovery and thought, and yet seemed to present insuperable difficulties to the acceptance of the great Christian verities, because these rested upon evidence which appealed to a præterscientific range of consciousness. He would remind those present that within the range of the human consciousness there are many things which appeal to what transcends those generalisations and conceptions at which the student of nature and of natural laws arrived from the study of material things; laws of the universe of being, which in fact appeal to the powers of spiritual perception in man, which constitute the region of a reasoned faith.

The speaker went on to say that he could not accept the reasoning of Spinoza, which had been quoted, because a *petitio principii* underlies it in common with the general *dictum* of Herbert Spencer as to "the unknowable," in the assumption that we know enough of the Author of the Universe to be able to postulate what He can or cannot do—the fallacy of measuring the Infinite by the finite. It savoured of the intrusion of ideas of human legislation into the region of the Divine. It may fairly be contended that in nature there is no place for "Divine decrees" (*humano sensu*); that on fuller thought and reflection the notion of a Divine "decree" or *fiat* resolves itself into the working of *Divine thought realising itself in life and form*; and (with Mosley) that the idea of Divine creative thought ceasing to act is unthinkable. There is, therefore, infinitely more room for the introduction into the order of nature (so far as it is known to us) of modifications through the direction (by creative will) of tendencies obscured from scientific observation, than there is for the admitted fact of the modification, within more limited regions, of the course of natural events by the action of the human will. Spinoza and Herbert Spencer, in different ways, seem to fall into the logical snare of adopting a *universal negative*, based in the last resort on the limitations of their own powers of conception of *the possible*; the more reverent and safer attitude of the present scientific spirit, among the younger and more

cultured scientific school, is to be ready, if necessary, to say—"We don't know."

Dr. W. WOODS SMYTH said: I have great pleasure in seconding the vote of thanks to Professor Orchard for his important and interesting paper. He has clearly shown that science and men of science are not opposed to the possibility or even the probability of miracles. In one sense, therefore, the paper is rather misplaced, because while science accepts miracles it is the Church which rejects them. Therefore we should have had a paper on the attitude of the Church towards miracles. I may illustrate my meaning by pointing to the fact that Professor Huxley said that the Incarnation and the Resurrection offered no difficulty to him as a man of science, yet some of our leading divines are telling us of how difficult it is for them to accept these miraculous occurrences. Again, even in the case of Joshua's miracle of the sun standing still, Huxley said it presented no difficulties. The moment we admit the existence of an Infinite Being, it was as easy for Him to alter the movements of the solar system, as for the Professor to alter the hands of his watch. I may mention here that the eminent astronomer, Mr. E. W. Maunder, says that the astronomical, topographical and military data given in regard to Joshua's miracle all point to a truthful record.

However, there is a point which arises here and negatives all attempts to explain miracles. We, as created beings, are not competent to explain the mode of operation of uncreated Infinite Being. It is out of the question to try to explain Joshua's miracle by the Lord slowing the rotation of the earth, etc., because it is unphilosophic to imagine that the universe presents to an Infinite Being merely ponderous bodies governed by the law of gravitation, as it does to us. Neither men nor angels may ever be able to explain how this and other miracles have been accomplished.

In reply to an objector who contended that the miracles of the New Testament were alleged to have taken place in credulous times he said, the days of our Lord's miracles were the most sceptical the world has yet seen.

J. SCHWARTZ, Esq.—While congratulating the lecturer on his interesting paper, I would point out that there is a large and growing section of modern Christians who realise perhaps more intensely than was ever done before the inspired ethical beauty of Christ's teaching and personality, but regard the miraculous

accretions, with which pious disciples enshrined His memory, as a present source of weakness rather than a support to true religion. The lecturer has laboured, I think, very needlessly over the point that miracles are possible, which I believe modern scientists do not attempt to deny. Science is confined to the co-ordination of phenomena, and the sciences of psychology and history (including that of comparative religions) do not disprove but explain alleged miracles, and make it quite clear that a real miracle would have occurred if alleged miracles had not been interwoven into the Christian tradition. Ethnology has demonstrated that primitive folk everywhere and always remain unconscious of the invariable sequence of phenomena, which has only been thoroughly realised during the last few generations of the scientifically educated. All natural phenomena were thought of as regulated by spirits, influenced by magic, flattery, sacrifice, spells and ceremonies; and the large mass of the uninstructed and many of the so-called educated whose knowledge is largely confined to the study of the prejudices of past generations, hold this fetish form of religion in a modified form at the present time, in civilised countries such as Spain, Portugal, Russia, and the country districts of Italy and France. Patient impartial scientific investigation has rejected the alleged miracles of to-day, and open-minded historians have explained the like misconceptions of past ages. It is a well-established psychological law that miracles are seen by those and those only who expect to see them. Strongly as I differ from the general conclusions of Cardinals Newman and Manning, I, together with many "broad" Christians, consider that their contention that modern, mediæval, and Biblical miracles form an unbroken chain, and stand or fall together, is proved up to the hilt. The Virgin Mary is still believed to be walking about in the country districts of France and Belgium, and recently to have raised from the dead a pilgrim youth hung in error with a highwayman. Christian miracles were accepted by a population in a still lower state of credulity, and the cultured rejected them, as is clearly stated by New Testament writers, the Fathers and their opponents, and they did not receive general acceptance until the Barbarian had destroyed the old civilisation, and the dark ages had set in. The lecturer's definition, "Science is the investigation and study of things and phenomena in nature, with a view to their explanation and

correlation in the great order of the universe," is too broad. Science does not attempt to explain (as fruitlessly attempted by philosophy and metaphysics) but is content to state the co-relation of phenomena. His definition of a miracle as "An exceptional marvel in nature not explicable by natural causes" may be accepted, but the inference "and therefore directly attributable to a supernatural cause," science will not allow, because she hopes with a larger knowledge to bring many phenomena that appear exceptional into co-ordination with the natural order of phenomena. I fail to understand why earthquakes, the burning of stars, and the odd (*sic*) behaviour of radium can be described as "interrupting the continuity of nature," no such suggestion has ever been made to my knowledge by any scientist. His attempts to demonstrate that "the same forces sometimes act in the most opposite way" by stating that "a charge of electricity sometimes attracts, sometimes repels," is a strange one; surely he is aware that the one word is employed for two contrary manifestations differentiated as positive and negative. The statements that "Compared with Bible miracles the spurious miracles which have from time to time attempted to delude mankind, exhibit a difference of character so great as best to be described as contrast," and again, "Nor can the belief in the Christian miracles be accounted for by what is termed the Mythopoetic theory," are at variance with the honoured opinions of many of our most eminent liberal scholars, as exemplified below.

J. S. Mill.—"Stories of miracles only grow up among the ignorant. Modern Roman Catholic miracles often rest upon an amount of testimony greatly surpassing that for the early miracles. Miracles have no claim whatever to the character of historical facts."

Matthew Arnold.—"The human mind is now losing its reliance on miracles, as its experience widens it gets acquainted with the natural history of miracles, and sees how they arise. The comparative history of all miracles admitted Bible miracles are doomed."

Professor Jowett.—"Every one who affirms the truth of miracles does in fact assert the truth of his own miracles, as the one exception to all the rest. But how impossible is this. For he asks you to believe the most improbable of all things, and does at the same time acknowledge a principle of self-illusion in human nature quite

sufficient to have invented them. Men will in time give up miracles as they have given up witchcraft."

Professor Lecky.—"We must quite dismiss from our minds the ordinary Protestant notion that miracles are very rare and exceptional phenomena, the primary object of which was always to accredit the teacher of some divine truth that could not otherwise be established. In the writings of the fathers, especially of the fourth and fifth centuries, they were a kind of celestial charity, supplying the wants of the faithful. Both Christians and Pagans admitted the reality of the miracles of the other, though ascribing them to the agency of demons. Whenever a saint was canonised it was necessary to prove that he had worked a miracle; there were 25,000 in the Bollandist collection, also thousands of miraculous images and pictures. All history shows that in exact proportion to the intellectual progress of nations the accounts of miracles become rarer and rarer, until at last they entirely cease. It is the fundamental error of most writers on miracles to ignore the predisposition of men in certain stages of society towards the miraculous, which makes an amount of evidence that would be quite sufficient to establish an ordinary fact altogether inadequate to establish a supernatural one. To suppose that the Fathers who held these opinions were capable in the second or third century to ascertain with any degree of just confidence whether miracles had taken place in Judæa in the first century is grossly absurd. The predisposition to believe the miraculous constructed out of a few natural facts the complicated system of witchcraft, persuaded all the ablest men for many centuries that it was incontestably true, and conducted tens of thousands of victims to a fearful and unlamented death, the minds of men were completely imbued with an order of ideas that had no connection with experience."

J. A. Froude.—"The Emperor Vespasian restored a blind man to sight, and a man with a disabled hand had recovered the use of it under circumstances which closely resemble those of the Gospel miracles. The historical inquirer can look only through the eyes of the early Christian writers who neither saw as he sees or judged as he judges. The world as they already knew it was already full of signs and wonders. A miracle was as little improbable in itself as any other event. Celsus wrote, 'The Christian teachers have no power over men of education, they call human wisdom folly.'

The conjurers whom Celsus and Lucian knew to be charlatans and impostors were to Origen enchanterers who had made a compact with Satan."

Dr. SCHOFIELD.—This lecture seems a fitting sequence to the last. There it was proved that the concept of a Divine Creator was necessary to a student of the phenomenon of the universe. To-day it seems equally clear that the supernatural or miraculous is a necessary effect of the Divine concept. What we call natural laws are in reality Divine laws, and their Author can of course change or modify their action at will.

It seems to me, however, that we make too much of the miracles Christ *did*, and too little of the miracle He *was*. The greatest miracles centred round Himself. His birth, life, resurrection, and ascension were all miraculous.

Then, again, I am not quite sure that Professor Orchard's definition of miracle, no doubt a very good one, will absolutely stand the test of a close examination. What is and what is not a natural cause? According to the previous action a molecule of radium may be watched and will be found absolutely unchanged during a ceaseless observation by generations of scientists for 3,000 years, and a natural law may be deduced therefore that radium is an unchangeable element, and yet within a few years later it may be entirely dissipated and vanish away, showing the natural law though right for 3,000 years is not after all a law at all.

Does Professor Orchard include the confused contradictions in the sequence of events and in the motions of bodies caused by the human will and life power among natural laws, or are they supernatural and spiritual? I read that God made iron swim which had sunk to the bottom of the water according to the law of gravitation.

Well, I can do the same; by my life and will power I can raise it up and hold it just level with the water. The difference is my arm is visible and God's is not. Do I work according to a natural law, and God by a supernatural? It seems to me a more satisfactory definition if miracle could be "an occasional and exceptional action of Divine power."

I need hardly say how heartily I join with the other speakers in the praise of this closely reasoned, logical, and convincing paper.

Lieut.-Col. MACKINLAY.—The Victoria Institute is to be con-

gratulated on this excellent paper, and the judges deserve our sincere thanks for their laborious task of reading through the nine essays and deciding on the best one.

In further support of the author's refutation of the old statement that miracles are violations of the laws of nature, pp. 2, 10, and 27, it may be noticed that several miracles are recorded as being themselves subject to law, as we are told that they could only be performed when faith was present: I refer to Matt. xiii, 58, "He did not many mighty works there because of their unbelief": to Mark ix, 23, "If thou canst, all things are possible to him that believeth," and in Acts xiv, 9, 10, the Apostle Paul said that the cripple had faith to be made whole, *before* he said to him, "Stand upright on thy feet." (See also Matt. ix, 29, Mark ii, 5 and 52, Luke xviii, 42.) In all these instances a law is evident that certain miracles could only be performed when faith was present on the part of the recipient.

Our author rightly insists on the value of the testimony of the Bible to the miracles therein recorded. Most men who deny that Bible miracles happened would more or less deny the historic truth of the Scripture record. Hence it would seem that the arguments in the paper before us would have been strengthened if more space had been devoted to the remarkable historic accuracy in Scripture recently demonstrated by archæological research, as for instance, in the Book of the Acts where the exact and varied titles* are most correctly given to different magnates, *e.g.*, to Sergius Paulus, styled *pro-consul* in Acts xiii, 7. In Thessalonica, Acts xvii, 6, *politarchs* are mentioned: a word unknown in other history until an ancient gateway was discovered in the ruins of that city bearing an inscription with that very title. *Chief man* in Malta, Acts xxviii, 7, is also attested by a local inscription. Again in Acts xiv, 6, Paul and Silas, we are told, fled to the cities of Lycaonia, Lystra, and Derbe. Sir W. M. Ramsay† has shown that in the first century these two cities were both included in Lycaonia, but in the second century Lystra was separated and identified with Iconium.

These are only *some* examples of the recently demonstrated

* *Bible Accuracy*, 1903, pp. 59, 60. Col. C. R. Conder.

† *Trans. Vict. Inst.*, 1907, "Exploration of Asia Minor as bearing on the historical trustworthiness of the New Testament," p. 209.

historical truth of *one* of the books of the New Testament; its historic testimony to the truth of the miraculous Resurrection which it so frequently alludes to should therefore also be received, even by those who may have previously doubted the sacred narrative.

On p. 31 our author speaks of the myth theory to account for the origin of various Bible miracles including that of the Resurrection. If there really had been any such connection, why did not the Apostle Paul make mention of it when he preached at Athens, Acts xvii, 16-34, in accordance with his usual plan of being "all things to all men"? As a matter of fact he did quote a heathen poet that "we are all His offspring." But when he spoke of the Resurrection of Christ why did he not explain that it was only a modification of some heathen myth with which they were already familiar? It would have been quite in accord with his usual methods, if he could have done so with truth.

The fact that he did not do so, and that some mocked and others assumed an indifferent attitude directly Paul preached the Resurrection (Acts xvii, 32) is quite in accord with the supposition that that grand event was unheard of and incredible to them. It gives a strong negative to the idea that the Resurrection is a copy of some ancient heathen myth. Paul's hearers, educated Epicurean and Stoic philosophers, must have had a wide knowledge of heathen religion, and yet no idea of any connection between the Resurrection and stories in heathen mythology struck any of them.

I should like to add that I much hope that the Institute will make special arrangements to widely circulate this useful essay, which is eminently suited to the needs of the times.

The AUTHOR expressed his thanks to the Chairman for his kind remarks. He wished also to thank the various speakers and the large audience for the way in which the paper had been received.

One gentleman, however, had permitted himself to make one or two assertions which appeared discordant from fact. Such was the statement that the Christian Miracles were not believed until the dark ages. The Bible miracles were believed by Christians from the very first. Christianity was founded upon, and explained by, the miracles of the Incarnation, the Resurrection, and the character of the Redeemer. The fact of the miracles was not denied by opponents, though they sought to attribute them to magic.

In connection with the definition of a miracle (p. 4) Dr. Schofield asked for a definition of "natural causes." Perhaps a satisfactory answer is that a natural cause is a cause acting according to "natural laws" (or uniformities), "natural" meaning stated, fixed, and settled.*

Responding later to a vote of thanks, the author called for one to the Chairman, which was carried by acclamation.

Further reply by the AUTHOR:—

I wish to thank Mr. Schwartz for some interesting criticism which deserves further comment. Some of his assertions seem inaccurate. He says that "It is a well-established psychological law that miracles are seen by those, and those only, who expect to see them." I am unaware of any such law, and he does not support the assertion by any authority. This so-called "law" does not appear to have been operative in, *e.g.*, the feeding of the multitudes, Christ's walking on the sea and His stilling of the storm, the opening of the doors of the Apostles' prison. Mr. Schwartz argues that because Science has shown that some phenomena which had been attributed to supernatural agency have been traced to natural causes, therefore all such occurrences can be so explained. This is to fall into the fallacy well known in logic as "Undistribution of the Middle Term." To confound together the Bible miracles with the pretended "miracles" of mediæval fame is not a scientific procedure. The Bible miracles (as is shown in the paper) stand the tests of Science, but the mediæval "miracles" do not do so.

With regard to the argument that the early Christian age was superstitious, it may be answered that a superstitious people would be *especially* the class on whose behalf a theophany might be expected to be attended by miracle. We should also bear in mind that the Jews were not a credulous people, that the Apostle Paul—himself no mean example of culture—spent a long time "disputing daily in the school of one Tyrannus," and that the Gospel was very early and successfully preached at such centres of culture as Athens, Corinth, Ephesus. If it be objected that many cultured people did not believe, the obvious reply is that many uncultured people did not believe. The explanation of unbelief is for both classes the same, namely, man's guilty repugnance to the truth of the Gospel.

* Butler.

Mr. Schwartz's statement that Science will not attribute to a supernatural cause a phenomenon which cannot be assigned to any other cause appears to be inadvertent. Science attributes every effect to some cause.

He is perplexed with an illustration from an electrical charge which goes to show that the same force may, under different conditions, produce opposite phenomena. He must surely be aware that an electrical charge attracts one body and repels another according to the electrical condition of the bodies.

The opinions of certain "liberal scholars" quoted by him can be outweighed by others on the opposite side. They have little to do with Science, though it is interesting to note that Lecky admits that the Christian miracles were conceded by the Pagans. If Mr. Schwartz will read the note at p. 20 of the paper, he will see Mill's considered conclusion as to the "only antecedent improbability which can be ascribed to a miracle."

My thanks are due to Dr. Schofield, who invariably illuminates every discussion in which he takes part. I am indebted to him for several valuable observations. He seems, however, to err in referring *all* miracles to God in view of such passages in Holy Writ as Exodus vii, 12, and viii, 7, Deut. xiii, 1 and 2, Rev. xiii, 14, and xvi, 14.

As to man, he may be looked upon as in some regards a part of nature, but supernatural as to his will. He is a link between the natural and the supernatural, partaking of the character of both.

The definition of a *miracle* (p. 4 of the paper) should read as follows:—*A miracle is an exceptional marvel in nature which, not being explicable by any human or any natural cause, is attributable to some supernatural cause.*

This will, I think, meet Dr. Schofield's difficulty.

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